

Listing of Claims

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

Claim 1 (canceled).

Claim 2 (currently amended): An X-ray CT apparatus ~~according to claim 1 for~~ generating a tomographic image by reconstructing projection data acquired by scanning a predetermined slice of a subject, said X-ray CT apparatus comprising detecting means for detecting a static cardiac time phase with a small amount of motion artifacts in a predetermined portion of the subject based on heartbeat information acquired in association with the projection data, and image reconstructing means for generating the tomographic image by reconstructing projection data corresponding to the static cardiac time phase detected by the detecting means, wherein the detecting means detects the static cardiac time phase based on correlation data between the heartbeat information and the static cardiac time phase that are previously determined to each subject.

Claim 3 (previously presented): An X-ray CT apparatus according to claim 2, wherein the correlation data is prepared to each of different portions of the subject, and the detecting means comprises input means for setting the predetermined portions.

Claim 4 (previously presented): An X-ray CT apparatus according to claim 2, wherein the correlation data includes at least a correlation between a heartbeat rate and a

static cardiac time phase.

Claim 5 (previously presented): An X-ray CT apparatus according to claim 2, further comprising memory means for storing the projection data acquired over a plurality of heart beat cycles and a projection data synthesizing means for reading the projection data corresponding to the static cardiac time phase detected by the detecting means and synthesizing the projection data, wherein the image reconstructing means reconstructs the projection data synthesized by the projection data synthesizing means.

Claim 6 (canceled).

Claim 7 (currently amended): An X-ray CT apparatus according to claim ~~[[6]]~~ 8, wherein an image size of the sample tomographic image is set smaller than that of the tomographic image.

Claim 8 (currently amended): An X-ray CT apparatus ~~according to claim 7~~ for generating a tomographic image by reconstructing projection data acquired by scanning a predetermined slice of a subject, said X-ray CT apparatus comprising detecting means for detecting a static cardiac time phase with a small amount of motion artifacts in a predetermined portion of the subject based on heartbeat information acquired in association with the projection data, and image reconstructing means for generating the tomographic image by reconstructing projection data corresponding to the static cardiac time phase detected by the detecting means,

wherein the detecting means comprises sample tomographic image rearranging means for generating a plurality of sample tomographic images having a different cardiac time phase based on the projection data and the heartbeat information and selecting means for selecting a sample tomographic image with a small amount of motion artifacts from the plurality of sample tomographic images, wherein the image reconstructing means generates the tomographic image by reconstructing projection data corresponding to the cardiac time phase of the sample tomographic image selected by the selecting means, and

wherein the selecting means calculates an integrated value of a CT value of each of the plurality of sample tomographic images in a predetermined region and selects a sample tomographic image with a smallest fluctuation of the integrated value of the CT value.

Claims 9-10 (canceled).

Claim 11 (currently amended): An X-ray CT apparatus according to claim [[7]] 8, further comprising memory means for storing the projection data acquired over a plurality of heart beat cycles and projection data synthesizing means for reading the projection data corresponding to the cardiac time phase of the sample tomographic image selected by the selecting means and synthesizing the projection data, wherein the image reconstructing means reconstructs the projection data synthesized by the projection data synthesizing means.

Claim 12 (currently amended): An X-ray CT apparatus according to claim [[7]] 8, wherein the sample tomographic image generating means generates the plurality of sample tomographic images in a predetermined cardiac time phase range determined based on the correlation data between the heartbeat information and the static cardiac time phase that are determined previously.

Claim 13 (previously presented): An X-ray CT apparatus according to claim 12, wherein the correlation data is prepared to each of different portions of the subject, and the detecting means comprises input means for setting the predetermined portions.

Claim 14 (previously presented): An X-ray CT apparatus according to claim 12, wherein the correlation data includes at least a correlation between a heart rate and a static cardiac time phase.

Claim 15 (previously presented): An X-ray CT imaging method of generating a tomographic image by reconstructing projection data acquired by scanning a predetermined slice of a subject, said X-ray CT imaging method comprising detecting a static cardiac time phase with a small amount of motion artifacts in a predetermined portion of the subject based on heartbeat information acquired in association with the projection data, and generating the tomographic image by reconstructing projection data corresponding to the detected static cardiac time phase.

Claim 16 (previously presented): An X-ray CT imaging method according to claim

15, further comprising acquiring correlation data between the heartbeat information and the cardiac time phase from each subject, wherein the static cardiac time phase is detected based on the correlation data.

Claim 17 (previously presented): An X-ray CT imaging method according to claim 15, further comprising generating a plurality of sample tomographic images having respective different cardiac time phases based on the projection data and the heartbeat information, selecting a sample tomographic image with a small amount of motion artifacts from the plurality of sample tomographic images, and using a cardiac time phase corresponding to the selected sample tomographic image as a static cardiac time phase.

Claim 18 (previously presented): An X-ray CT imaging method according to claim 17, wherein an image size of the sample tomographic image is set smaller than that of the tomographic image.

Claim 19 (previously presented): An X-ray CT imaging method according to claim 15, further comprising acquiring correlation data between the heartbeat information and the static cardiac time phase from each subject, and generating the plurality of sample images in a predetermined cardiac time phase range determined based on the correlation data.